AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-20. (cancelled)

21. (previously presented) A method for ensuring the colorimetric quality of a document output by a production machine and including a control range, which comprises the following steps:

a) the arbitrary choice of at least one of the following data:

i) at least one control range,

ii) theoretical reference values to be measured over said at least one control range,

iii) acceptability tolerances and

iv) information relating to the conditions for measuring the ii) and iii) values;

b) the recording of the data a)i) to a)iv) and their coding in the form of a unique identifier; and

c) the incorporation into the document, of said unique identifier, in any arbitrary representational or coding form; it being possible, by reading said unique identifier, to identify said data a)i) to a)iv) and to measure, under the conditions as defined in a)iv), actual reference values of the control range of the document, while comparing said actual values with those theoretical values defined in a)ii), taking into account the tolerances as defined in a)iii), makes it possible to verify the colorimetric quality of the document.

22. (previously presented) The method as claimed in claim 21, wherein information regarding the configuration of the

production machine is also chosen, recorded and coded by said unique identifier.

23. (previously presented) The method as claimed in claim 21, wherein the choice of all or part of the data a)i) to a)iv) is made from predefined data of control ranges devised by public or private organizations.

24. (previously presented) The method as claimed in claim 21, wherein said reference values of step a)ii) are spectral, colorimetric or densitometric values.

25. (previously presented) The method as claimed in claim 24, wherein the information associated with the measurement conditions of step a)iv) are the illuminant used, the viewing angle for the colorimetric calculation, the spectral response for the densitometric calculations, the type and brand of the apparatus used for this measurement, the optical filtering and the measurement geometry.

26. (previously presented) The method as claimed in claim 21, wherein the recording and the coding of said data of step b) take place on a database and in that the data is identified by connection to said database, said unique identifier being an index of said database.

27. (previously presented) The method as claimed in claim 26, wherein said database is accessible by linking to an Internet-type computer network or via a local Intranet server storing only the necessary data, or via a standard wire, radio or infrared link.

28. (previously presented) The method as claimed in claim 21, which includes a step of converting said unique identifier into a barcode.

29. (previously presented) The method as claimed in claim 28, wherein the conversion step is carried out by calculating and transmitting a bitmap or vector image of the barcode according to an arbitrary coding and in any form of computer file, or by transmitting the unique identifier itself, in any form of coding or arbitrary representation, allowing a local computer program to print this identifier in the form of a barcode.

30. (previously presented) The method as claimed claim 28, wherein the barcode is a monochrome or color, linear barcode.

31. (previously presented) The method as claimed in claim 21, wherein step c) is carried out by incorporating, into said document, said unique identifier, by a computer program that contributes to the production of the document, with a view to its reproduction alongside the at least one control range.

32. (previously presented) The method as claimed in claim 28, wherein said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode.

33. (previously presented) A spectrophotometer for implementing the method as claimed in claim 28, wherein said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;
- an illuminator designed to illuminate said document produced over part of its surface;
- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes, and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned.

34. (currently amended) [[The]] A spectrophotometer for implementing the method as claimed in claim 28, wherein said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;

- an illuminator designed to illuminate said document produced over part of its surface;

- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes, and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned; said spectrum analyzer or said measurement aperture also allowing the barcode to be read.

35. (currently amended) [[The]] A spectrophotometer for implementing the method as claimed in claim 28, wherein said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;

- an illuminator designed to illuminate said document produced over part of its surface;

- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes, and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned;

said light spectrum analyzer using a diffraction grating and a linear array of photosensitive elements measuring the intensity of the diffracted light over each visible and near-visible wavelength band.

36. (currently amended) [[The]] A spectrophotometer for implementing the method as claimed in claim 28, wherein said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;

- an illuminator designed to illuminate said document produced over part of its surface;

- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes, and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned;

said light spectrum analyzer is a filter spectrum analyzer using, for measuring the light spectra, a set of narrow-band filters mounted on a revolving turret passed a photosensitive element that measures each band of the light spectrum through the successive filters as the turret revolves, a monochrome barcode being read by means of a spot of a single wavelength, the turret positioning a bandpass filter suitable for reading the barcode by the existing photosensitive element, or the barcode being read by using one or more photosensitive elements filtered at the wavelengths of the at least one light source (12).

37. (currently amended) [[The]] A spectrophotometer for implementing the method as claimed in claim 28, characterized said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;

- an illuminator designed to illuminate said document produced over part of its surface;

- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes,

and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned;

the illuminator being an illuminator of 45/0° (5) or 0/45° (15) standardized geometry.

38. (currently amended) [[The]] A spectrophotometer for implementing the method as claimed in claim 28, characterized said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;

- an illuminator designed to illuminate said document produced over part of its surface;

- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes, and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned;

the illuminator being an integrating sphere illuminator with a standardized geometry of the diffuse/0° (13) or 0°/diffuse (14) type.

39. (currently amended) [[The]] A spectrophotometer for implementing the method as claimed in claim 28, characterized said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;

- an illuminator designed to illuminate said document produced over part of its surface;

- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes, and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned;

said at least one light source being a light-emitting diode focused onto the plane of the document.

40. (currently amended) [[The]] A spectrophotometer for implementing the method as claimed in claim 28, characterized said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;

- an illuminator designed to illuminate said document produced over part of its surface;

- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes, and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned;

said spectrophotometer being combined with a diode laser for reading monochrome linear barcodes.

41. (currently amended) [[The]] A spectrophotometer for implementing the method as claimed in claim 28, characterized said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;

- an illuminator designed to illuminate said document produced over part of its surface;

- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes, and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned; said spectrophotometer being combined with several diode lasers of different wavelengths for reading color barcodes.

42. (currently amended) [[The]] A spectrophotometer for implementing the method as claimed in claim 30, wherein said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;

- an illuminator designed to illuminate said document produced over part of its surface;

- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes, and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned;

said spectrophotometer being combined with a diode laser for reading monochrome linear barcodes;

the diode lasers and the associated optics producing separate or merged light spots.

43. (currently amended) [[The]] A spectrophotometer for implementing the method as claimed in claim 28, characterized said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;

- an illuminator designed to illuminate said document produced over part of its surface;

- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes, and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned; and wherein said spectrophotometer can be used in manual mode or in automatic mode.

44. (currently amended) [[The]] A spectrophotometer for implementing the method as claimed in claim 28, characterized said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;

- an illuminator designed to illuminate said document produced over part of its surface;

- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes, and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned; and wherein , for use in manual mode, a pushbutton makes it possible:

- by pushing briefly, to measure a single color area; or

- by maintained pressure, to initiate the operation of the continuous spectral measurement mode by scanning, the detection of an arbitrary sequence of successive color areas at the start of measurement of a line automatically causing the spectrophotometer to switch to barcode read mode, by turning off the illuminator and turning on the diode laser(s).

45. (currently amended) [[The]] A spectrophotometer for implementing the method as claimed in claim 28, characterized said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;

- an illuminator designed to illuminate said document produced over part of its surface;

- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes, and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned;

said spectrophotometer being combined with a diode laser for reading monochrome linear barcodes,

wherein said spectrophotometer can be used in manual mode or in automatic mode and wherein the light spot(s) provided for reading barcodes are merged in the plane of the document reproduced, allowing spectral measurements over color areas of very small size, after calibration on a ceramic.

46. (currently amended) [[The]] A spectrophotometer for implementing the method as claimed in claim 28, wherein said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;

- an illuminator designed to illuminate said document produced over part of its surface;

- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes, and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned; and wherein said spectrophotometer includes a display device that delivers indications such as the start and end of the measurements, the successful or unsuccessful decoding of a barcode, the current interrogation of a remote database, and the acceptance or rejection of a document.

47. (previously presented) The spectrophotometer as claimed in claim 33, wherein said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;

- an illuminator designed to illuminate said document produced over part of its surface;

- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes, and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned;

wherein said spectrophotometer includes a display device that delivers indications such as the start and end of the measurements, the successful or unsuccessful decoding of a barcode, the current interrogation of a remote database, and the acceptance or rejection of a document,

and wherein display device is a liquid-crystal or light-emitting diode device.

48. (previously presented) The spectrophotometer as claimed in claim 33, wherein said barcode is read by means of a modified spectrophotometer in order to allow reading by scanning said control range and said barcode, said modified spectrophotometer comprising:

- a light spectrum analyzer having a light entry aperture;

- an illuminator designed to illuminate said document produced over part of its surface;

- a measurement aperture defining the illuminated area of the document, the reflection spectrum of which is measured, as is the barcode;

- an optical link transmitting the light reflected by the illuminated color area to the spectrum analyzer;

- a specialized electronic circuit, or software, which corrects the raw spectrum measured by scanning, over each measured wavelength band, by measuring in the absence of light and by measuring a known reflection spectrum standard;

- at least one light source and its collimation optic, producing a visible, infrared or ultraviolet light spot whose size and wavelength are matched to the reading of the barcodes, and a photosensitive element that detects the reflected light when a barcode is being scanned; and

- an electronic processing circuit for shaping and decoding the received signal when a barcode is being scanned; and wherein said spectrophotometer includes a microprocessor for managing the control buttons of the apparatus, the turning-off and turning-on of the various light sources, the processing electronics, the barcode decoding electronics, all the calculations based on the acquired data, the communications with external computers, and the display devices.